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EXAMINER	
RODRIGUEZ, GLENDA P	
ART UNIT	**PAPER NUMBER**
2651	

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/718,341	MA ET AL.	
	Examiner	Art Unit	
	Glenda P. Rodriguez	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5, 6, 8-10, 12, 16, 17, 26-30, 32, 36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by McNeil et al. (US Patent No. 6, 404, 570 B1).

Regarding Claim 1, McNeil et al. teaches a method of operating an information storage system which includes an information storage medium and structure operable to effect information transfers with respect to said information storage medium, comprising:

> Monitoring a characteristic of information read by said structure from said storage medium, including determining whether said characteristic satisfies a predetermined criteria (Col. 3, L. 65 – Col. 4, L. 4. See also Col. 9, L. 45 – Col. 10, L. 35 and Col. 11, L. 38-44. Mc Neil et al. teaches that after numerous parameters are monitored and chosen for the optimization of the channel.);
>
> And responding to a determination that said characteristic fails to satisfy said predetermined criteria by carrying out a course of action which includes a selected action that reduces the likelihood of non-recoverable errors in data read by said structure from said storage medium (Col. 3, L. 65 – Col. 4, L. 4. See also Col. 9, L. 45 – Col. 10, L. 35 and Col. 11, L. 38-44. Mc Neil et al. teaches that after

numerous pass/fail parameter tests (i.e. threshold, write current, etc), then these parameters are monitored and chosen, then a final drive test is done to the disk drive, hence if the drive fails that final test, then the medium is then qualified as a failing medium.).

Apparatus claim (26) is drawn to the apparatus corresponding to the method of using same as claimed in claim (1). Therefore apparatus claim (26) corresponds to method claim (1), and is rejected for the same reasons of anticipation as used above.

Regarding Claim 12, McNeil et al. teaches a method of operating an information storage system which includes an information storage medium having an information storage surface with first and second portions, and which includes structure operable to effect information transfers with respect to said first portion of said surface, said structure including a head which is movable relative to said surface, comprising:

Moving said head from a first position spaced from said surface to a second position in which said head is adjacent said second portion of said surface (Col. 2, L. 50-65. McNeil et al. teaches a starting position in which the medium starts by selecting its target (i.e. second position) wherein the head will be transferred);

Waiting a predetermined time interval while effecting relative movement of said head and said surface with said head adjacent said second portion of said surface (It is inherent that when a head unit is moving from one area to another in order to perform a second operation, a predetermined time is awaited in order for the drive to arrive to its target track for the second operation.); and thereafter moving said head to a third position in which said head is adjacent said first portion of said

surface (Col. 2, L. 50-65, wherein McNeil et al. teaches moving the medium to a second area in the disk (i.e., third position since starting position) in order to perform an operation to that third location.).

Apparatus claim (32) is drawn to the apparatus corresponding to the method of using same as claimed in claim (12). Therefore apparatus claim (32) corresponds to method claim (12), and is rejected for the same reasons of anticipation as used above.

Regarding Claims 16, McNeil et al. teaches a method of operating an information storage system which includes an information storage medium having an information storage surface, and which includes structure operable to effect information transfers with respect to said surface, said structure including a head which is movable relative to said surface, comprising:

Calculating a distance of said head from said surface based on information read by said structure from said surface (Col. 12, L. 4-14, wherein McNeil et al. teaches a fly-height test (i.e. head to disk spacing) can be effectuated for optimization of the channel.); and

Determining as a function of said distance whether one of said head and said storage medium is likely to fail to satisfy a predetermined operational criteria (Col. 3, L. 65 – Col. 4, L. 4. See also Col. 9, L. 45 – Col. 10, L. 35 and Col. 11, L. 38-44. Mc Neil et al. teaches that after numerous pass/fail parameter tests (i.e. threshold, write current, etc), then these parameters are monitored and chosen, then a final drive test is done to the disk drive, hence if the drive fails that final test, then the medium is then qualified as a failing medium.).

Apparatus claim (36) is drawn to the apparatus corresponding to the method of using same as claimed in claim (16). Therefore apparatus claim (36) corresponds to method claim (16), and is rejected for the same reasons of anticipation as used above.

Regarding Claims 17 and 37, McNeil et al. teaches all the limitations of Claims 16 and 36, respectively. McNeil et al. further teaches said information used for determining said distance is user data and responding to a determination that one of said head and said storage medium is likely to fail to satisfy the predetermined operational criteria by: calculating a second distance of said head from said surface based on servo information read by said structure from said surface; and determining as a function of said second distance whether one of said head and said storage medium is likely to fail to satisfy a predetermined operational criteria (Col. 2, L. 50-62, Col. 4, L. 23-35 and Col. 9, L. 45 to Col. 10, L. 35 and Col. 11, L. 38-44).

Regarding Claims 2 and 27, McNeil et al. teaches all the limitations of Claim 1 and 26, respectively. McNeil et al. further teach wherein using said structure to write selected data to said storage medium thereafter reading said selected data from said storage medium and then carrying out said monitoring of said characteristic based on said selected data as read back from said storage medium (Col. 2, L. 52-62).

Regarding Claims 3 and 28, McNeil et al. teaches all the limitations of Claims 2 and 27, respectively. McNeil et al. further teaches wherein including selecting as said characteristic one of a soft error rate and a channel quality parameter (Col. 4, L. 23-35, wherein McNeil et al. teaches a channel optimization technique for an opt error rate. See also Col. 8, L. 4-10.).

Regarding Claim 4, McNeil et al. teach all the limitations of Claim 3. McNeil et al. further teach wherein including selecting the soft error rate as said characteristic and wherein

said determining of whether said characteristic satisfies a predetermined criteria includes comparing said soft error rate to a value selected as a function of a relationship of hard read errors with respect to the soft error rate (Col. 9, L. 45 to Col. 10, L. 35).

Regarding Claims 5 and 29, McNeil et al. teaches all the limitations of Claims 1 and 26, respectively. McNeil et al. further teach wherein said course of action includes:

> Reading further information from a different location on said storage medium, determining whether said characteristic satisfies said predetermined criteria with respect to said further information (Col. 2, L. 52-65), and responding to a determination that said characteristic fails to satisfy said predetermined criteria with respect to said further information by taking action which includes said selected action (Col. 3, L. 65 – Col. 4, L. 4. See also Col. 9, L. 45 – Col. 10, L. 35 and Col. 11, L. 38-44).

Regarding Claims 6 and 30, McNeil et al. teaches all the limitations of Claims 1 and 26, respectively. McNeil et al. further teaches said selected action includes one of inhibiting normal operation of said information storage system, preventing said structure from writing information to said storage medium, preventing said structure from writing information to said storage medium except in a write-with-verify operation, and carrying out a recovery procedure (Col. 11, L. 38-44, wherein McNeil et al. teaches a channel optimization procedure according to the chosen error rates wherein recovery is done by means of channel optimization of the channel characteristics in which these are monitored and varied in order to achieve an optimal channel operation.).

Regarding Claim 8, McNeil et al. teach all the limitations of Claim 1. McNeil et al. further teach wherein said monitoring of said characteristic is carried out in response to a user request for a transfer of information with respect to said storage medium, and prior to carrying out said user request (Col. 2, L. 50-65, wherein McNeil et al. teaches that the optimization technique is done after a writing operation is chosen.).

Regarding Claim 9, McNeil et al. teach all the limitations of Claim 1. McNeil et l. further teaches wherein said monitoring of said characteristic is carried out after carrying out a user request for a transfer of information with respect to said storage medium (Col. 2, L. 50-65, wherein McNeil et al. teaches that the optimization technique is done after a writing operation is chosen.).

Regarding Claim 10, McNeil et al. teach all the limitations of Claim 1. McNeil et l. further teaches wherein said monitoring of said characteristic is carried out using information read from said storage medium in response to a user request for that information (Col. 2, L. 50-65, wherein McNeil et al. teaches that the optimization technique is done after a writing operation is chosen.).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7, 13-15, 31, 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNeil et al. in view of Nagai et al. (US Patent No. 6, 687, 071).

Regarding Claims 7 and 31, McNeil et al. teaches all the limitations of Claims 6 and 30, respectively. McNeil et al. teaches a head used to transfer information with respect to said storage medium (Fig. 6, Element 92 of McNeil et al.); McNeil et al. does not teach wherein the cleaning operation is done as a recovery procedure. However, this feature is well known in the art as disclosed by Nagai et al., wherein it teaches a cleaning procedure being done to the magnetic heads because of error rate being worse than the threshold (Col. 1, L. 51-61 of Nagai et al.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify McNeil et al.'s invention with the teaching of Nagai et al. in order to lower abrasion occurrences (Col. 1, L. 43-50 of Nagai et al.).

Regarding Claims 13 and 33, McNeil et al. teaches all the limitations of Claims 12 and 32, respectively. McNeil et al. further teaches moving head from said second position to a position spaced from said surface (Col. 2, L. 50-65. McNeil et al. teaches a starting position in which the medium starts by selecting its target (i.e. second position) wherein the head will be transferred). McNeil does not teach wherein cleaning the head and moving it back to the second position. Nagai et al. teaches cleaning the head and moving it back to the second position (Col. 4, L. 7-59, wherein Nagai et al. teaches cleaning the head and continuation of reproduction (i.e. the head goes back its last position before cleaning the head procedure was assigned).). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify McNeil et al.'s invention with the teaching of Nagai et al. in order to lower abrasion occurrences (Col. 1, L. 43-50 of Nagai et al.).

Regarding Clam 14 and 34, McNeil et al. teaches all the limitations of Claim 12 and 32, respectively. McNeil et al. further teaches wherein said second portion of said information storage surface stores predetermined control information (McNeil et al. uses offtrack information, which is known in the art to be produced by the servo data, in which position control information is stored); including after said moving of said head to said second position, and before said moving of said head to said third position, evaluating a characteristic of the control information read by said head from said second portion of said surface to determine whether a distance between said head and said surface is currently greater than a selected value (Col. 2, L. 50-65. McNeil et al. teaches a starting position in which the medium starts by selecting its target (i.e. second position) wherein the head will be transferred. See also (Col. 12, L. 4-14, wherein McNeil et al. teaches a fly-height test (i.e. head to disk spacing) can be effectuated for optimization of the channel.). McNeil et al. does not teach wherein and responding to a determination that said distance is greater than said selected value by moving said head from said second position to a position spaced from said surface, cleaning said head, and then moving said head back to said second position. However, this feature is taught by Nagai et al. in Col. 4, L. 7-59, wherein Nagai et al. teaches cleaning the head and continuation of reproduction (i.e. the head goes back its last position before cleaning the head procedure was assigned). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify McNeil et al.'s invention with the teaching of Nagai et al. in order to lower abrasion occurrences (Col. 1, L. 43-50 of Nagai et al.).

Regarding Claim 15 and 35, the combination of McNeil et al. and Nagai et al. teaches all the limitations of Claims 14 and 34, respectively. The combination further teach wherein the

characteristics is a position error signal (Col. 2, L. 50-65 of McNeil et al., wherein off-track margins are measured, which is known that they are determined by the position error signal given by the disk.).

5. Claim 18-25 and 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNeil et al. in view of Gillis et al. (Us Patent No. 6, 266, 199).

Regarding Claims 18, 20, 22, 38, 40 and 42, McNeil et al. teaches all the limitations of Claims 717 and 37, respectively. McNeil et al. teaches determining as a function of said head and said storage medium is likely to fail to satisfy a predetermined operational criteria (Col. 3, L. 65 – Col. 4, L. 4. See also Col. 9, L. 45 – Col. 10, L. 35 and Col. 11, L. 38-44). However, McNeil et al. does not explicitly teach wherein rewriting the user data to said storage medium at the same location from which it was read; reading said rewritten user data back from said storage medium; calculating a third distance of said head from said surface based on said rewritten user data read back from said storage medium. However, this feature is well known in the art according to Gillis et al. wherein it teaches rewriting the user data to said storage medium at the same location from which it was read (Fig. 3, Element 68 of Gillis et al.); reading said rewritten user data back from said storage medium (Fig. 3, Element 70 of Gillis et al.); calculating a third distance of said head from said surface based on said rewritten user data read back from said storage medium (Fig. 3, Element 72 of Gillis et al., wherein Gillis teaches monitoring the distance from the head to the disk by the amplitude of the AGC (by readback operation) see also Col. 2, L. 45-50). Gillis et al. further teaches that this operation can be done a plurality of times in Col. 2, L. 30-44. It would have been obvious to a person of ordinary skill

in the art, at the time the invention was made, to modify the invention of McNeil et al. with the teaching of Gillis et al. in order to monitor the signal in order to prevent head to disk contact.

Regarding Claims 19, 21, 39 and 41, the combination of McNeil et al. and Gillis et al. teach all the limitations of Claims 18 and 38. The combination further teach wherein moving the user data to a different location on said storage medium (Fig. 3, Element 78 of Gillis et al.).

Regarding Claims 23 and 43, the combination of McNeil et al. and Gillis et al. teaches all the limitations of Claim 22 and 42, respectively. McNeil et al. further teaches wherein providing indication that the medium should be replaced (Col. 11, L. 38-44, wherein McNeil et al. indicates that the medium failed and should not be use, therefore it is obvious a new medium should replace the failing medium in order to evade the loss of data in the disk.).

Regarding Claim 24 and 44, the combination of McNeil et al. and Gillis et al. teach all the limitations of Claims 22 and 32. McNeil et al. further teaches wherein requesting that the medium should be replaced (Col. 11, L. 38-44, wherein McNeil et al. indicates that the medium failed and should not be use, therefore it is obvious a new medium should replace the failing medium in order to evade the loss of data in the disk.) and determining as a function of said head and said storage medium is likely to fail to satisfy a predetermined operational criteria (Col. 3, L. 65 – Col. 4, L. 4. See also Col. 9, L. 45 – Col. 10, L. 35 and Col. 11, L. 38-44). However, McNeil et al. does not explicitly teach wherein rewriting the user data to said storage medium at the same location from which it was read; reading said rewritten user data back from said storage medium; calculating a third distance of said head from said surface based on said rewritten user data read back from said storage medium. However, this feature is well known in the art according to Gillis et al. wherein it teaches rewriting the user data to said storage medium at the

same location from which it was read (Fig. 3, Element 68 of Gillis et al.); reading said rewritten user data back from said storage medium (Fig. 3, Element 70 of Gillis et al.); calculating a third distance of said head from said surface based on said rewritten user data read back from said storage medium (Fig. 3, Element 72 of Gillis et al., wherein Gillis teaches monitoring the distance from the head to the disk by the amplitude of the AGC (by readback operation) see also Col. 2, L. 45-50). Gillis et al. further teaches that this operation can be done a plurality of times in Col. 2, L. 30-44.

Regarding Claims 25 and 45, the combination of McNeil et al. and Gillis et al. teaches all the limitations of Claim 24 and 44, respectively. McNeil et al. further teaches wherein providing indication that the structure should be replaced (Col. 11, L. 38-44, wherein McNeil et al. indicates that the medium failed and should not be use, therefore it is obvious a new medium (and/or structure) should replace the failing medium in order to evade the loss of data in the disk.).

6. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable in view of McNeil et al. and Karp et al (US Patent No. 5, 172, 381). McNeil et al. teaches all the limitations of Claim 1. McNeil et al. does not explicitly teach wherein the monitoring is done during idle mode. However, Karp et al. teaches monitoring of errors done during the inactive (i.e. idle) mode in the medium, see Col. 8, L. 65 to Col. 9, L. 9). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify McNeil et al.'s invention with the teaching of Karp et al. in order to properly synchronize the read data and evade errors (see abstract of Karp et al.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gpr
May 31, 2005.

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